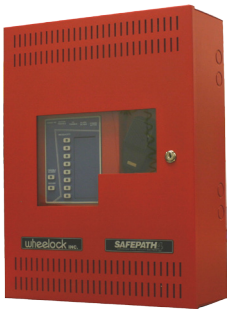
SAFEPATH facility communications system & expansion options



SP40S

SPB-320

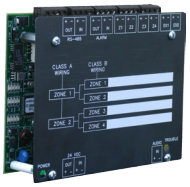
SPB-80/4
SPB-160

SP4-TZC

SPRM

SP4Z-A/B

SP-SVC


SP4-APS

Contents

Description **Page**

SP40S facility communications system 2-4
Expansion Options
- SAFEPATH 2-zone Class A or 4-zone Class B speaker audio splitter 5
- SAFEPATH audio boosters 6-7
- System diagram 8-9
- SAFEPATH addressable paging splitter and telephone zone controller 10
- SAFEPATH supervised volume control and remote microphone 11
- Remote microphone expansion module 12-13

Architects and engineers specifications 14-16

Powering Business Worldwide

SAFEPATH Facility Communications: SP40S

Description

The SP40S is a multifunction supervised paging, messaging, background music delivery and emergency voice evacuation system with 24 VDC battery backup. The SP40S integrates with fire alarm systems and provides full control of building audible and visual notification appliances. This single channel system is capable of delivering 40 watts of supervised high fidelity audio power and 2 amps of supervised 24 VDC synchronized strobe power. It comes standard with an on-board digital voice messaging system with 8 standard messages, a hand-held microphone, power supply/ battery charger and numerous additional features. The SAFEPATH system is expandable to 5280 watts utilizing the SPB-80/4 (80 watts and 4 amps of strobe power), the SPB-160 (160 watts) or SPB-320 (320 watts) supervised audio power boosters. All models are available in 115 VAC or 220 VAC.

Features

Background music

- Capable of broadcasting from a supplied background music (BGM) source
- Unique supervision method allows for full system supervision even during background music
- Line Level input for music source
- Frequency Response 100 Hz–15KHz

General paging

- Easily interfaces with most existing phone system page port, CO port and line level signals
- Automatically mutes BGM
- Frequency Response 275–6.5kHz
- Night ringer or security alert connection

Voice evacuation

- Complies to NFPA-72 requirements
- Supervised NAC speaker and strobe circuits
- Live microphone override
- 8 digitally pre-recorded voice messages
- Uses selectable pre-tones for messages

Strobe inputs and activation

- 2 Amps of 24 VDC supervised strobe power with built-in Wheelock sync protocol. Power limited.
- Strobe output is selectable for control of Wheelock sync protocol or non-sync operation
- Strobe terminals have pass-through capability for Wheelock sync or non-sync operation
- Any of the 8 messages can be dip switch selected to activate strobes
- Microphone activation can be dip switch selected to activate strobes
- Auxiliary activation (Remote MIC) can be dip switch selected to activate strobes
- 24 VDC supervised and synchronized strobe power can be expanded to meet the requirements of the installation via connecting to optional Wheelock power boosters

Speaker output

- 40 watts of supervised audio power
- Speaker outputs: 25V or 70.7V power limited

System activation

- Contact closure message activation

Audio processing

- Volume and tone controls for general paging and BGM
- Connectivity of optional speaker splitter modules
- Dual-tone tone generator with Code 3 Tone and Slow Whoop for alerting of system trouble
- Night ringer/security alerting capability
- Audio power can be expanded by connecting to optional audio power boosters
  - SPB-80/4: 80-watt supervised audio power booster with 4 Amp of Synchronized Strobe Power
  - SPB-160: 160-watt supervised audio power booster
  - SPB-320: 320-watt supervised audio power booster

Live & pre-recorded message announcement

- Supplied with 8 pre-recorded emergency messages
- Capable of in-field recording of all messages via 1/8" line level audio input jack
- Preset audio levels for emergency messaging (prerecorded and live mic)—system reverts back to a preset level regardless of the volume set for BGM or general paging
- On board push-to-talk microphone
- Telephone paging input, disconnects BGM when in use
- Auxiliary input for remote microphone connection

Power supply & batteries

- 24 VDC, 33AH max rechargeable battery back-up power circuitry built-in
- Batteries can be housed in the enclosure. Up to two BAT-1212, 12 volt, 12 ampere hour batteries can fit in the enclosure. Actual battery size required will depend on speaker and/or strobe load. (Batteries are sold separately.)

Note: All CAUTIONS and WARNINGS are identified by the symbol ⚠. All warnings are printed in bold capital letters.

⚠ WARNING

PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

Benefits & advantages

- One multi-function in-building communications system
- Background Music (BGM) system, with patent-pending supervision during BGM operation
- Supervised emergency/fire voice evacuation system
- Interfaces with telephone system for general paging requirements

- Built-in power for visual notification appliances (e.g., strobes)
- Expandable for larger system requirements (with optional equipment)

Approvals & compliances

- Approvals: UL Standard 864, 9th edition, UL Standard 1711, California State Fire Marshal (CSFM), New York City (MEA), FCC Part 15
- OSHA 1910.165 and ADA Compliant
- 1 year warranty

Applications

- **Multi-use applications:** The system can function as an evacuation system, an emergency messaging system, a paging system, an employee notification system and a background music system per NFPA 72.
- **Fire code applications:** The system is listed under UL Standard 864, 9th edition delivering supervised audio and voice messaging with strobes and notification appliance circuits (NAC) for visual alerting.
- **Economic OSHA applications:** The system is OSHA 1910.165 compliant and therefore it **does not** require reliability inspections every two months or the required spare parts inventory.
- Wide ranging applications—from small to large facilities
- Can connect to pagers for private alerting of emergency/ trouble conditions

Installation & maintenance

- Multiple trouble LED indicators for quick system diagnostics
- Fully supervised circuitry always in effect—even during BGM and general paging (via patent pending technology)
- Removable quick connect/disconnect terminals for ease of wiring; accepts #12 to #22 AWG
- Power-limited circuitry with Class "B" or Class "A" wiring (Class "A" only with use of audio splitter)
- Surge protected circuitry
- Audio and strobe power limiter reset button

Compatible Wheelock Products

- All Wheelock speaker/strobes
- All Wheelock strobes
- All Wheelock speakers
- All cluster speakers
- Wheelock strobe power supply

Table 1. Inputs: Audio & Activation

Priority Ordered Inputs	Priority Level	Type of Input
On Board Microphone	1	Push to Talk (PTT) Microphone
Auxiliary	2	Remote Microphone or Remote Microphone Expander
Digital Message Input 1	3	Contact Closure activation
Digital Message Input 2	4	
Digital Message Input 3	5	
Digital Message Input 4	6	
Digital Message Input 5	7	
Digital Message Input 6	8	
Digital Message Input 7	9	
Digital Message Input 8	10	
Night Ringer Input	11	Contact Closure input
Telephone Paging Input	12	Page port input
Background Music Input	13	Line Level Input, 600 ohm, input voltage must be less than 2.5 V peak to peak or 0.3 volts RMS

Table 2. Inputs: Audio/Technical Specifications

Switch mode, Class D amplifier (40 Watts)	
Speaker Outputs	25V or 70.7V power limited
Frequency Response	Voice: 275 Hz – 6.5 kHz BGM: 100 Hz – 15 kHz Meets UL Voice Evacuation Requirements of 800–2800 Hz
Signal-to-Noise Ratio	Better than 65 dB
Dynamic Range	Better than 65 dB
Total Harmonic Distortion	Less than 2%
Stand by Current Draw	130 mA
Alarm Current Draw	4.7 amps

Table 3. SP40S Mechanical

Dimensions	21" H x 16" W x 6" D (wall mount)
Weight	36 lbs. (without batteries)
Finish	Red or black exterior enclosure
Door Lock	Wheelock key-lock

Table 4. Ordering Information

Model Number	Order Code	Description
SP40S	9929	Multi-Function Supervised Paging, Messaging, Background Music delivery and Emergency Voice Evacuation System with 24 VDC battery backup circuitry. Single channel system with 40 watts of supervised audio power and 2 amps of supervised 24 VDC synchronized strobe power and 8 standard messages. (Batteries not included, 2 required.) Red Enclosure.
SP40S-B	9935	Same as above but with black enclosure
SP40SE	6138	Same as above but with 220 VAC input
SP40SE-B	6139	Same as above but with 220 VAC input and black enclosure
BAT-1212	7390	12 volt, 12-ampere hour battery
SP40S-PMK	9936	SP40S 8 Message Programmed Message Kit
AM-SP40S-SMK	9937	SP40S After Market 8 Message Standard Message Kit
AM-SP40S-PMK	9938	SP40S After Market 8 Message Programmed Message Kit
AM-SP40S-NBT	9939	SP40S After Market Narrow Band Signal Tone Kit
SP-COA	9908	C.O. Port Adapter for the SP40S – Recommended 24 VDC Power Supply is Wheelock RPS-2406 (Order Code 3770)
BATC-R	5414	Battery Cabinet, Red
BATC-B	5413	Battery Cabinet, Black
BAT-1224	7391	12 Volt, 24Ampere Battery Cell

Table 5. Message Capabilities

Message and Priority #	Type of Message	Voice Type	Message Script
1	Fire (Do not use elevators)	Male	Three (3) rounds of code 3 horn (followed by): "May I have your attention please! A fire emergency has been reported in the building. While this is being verified, please leave the building by the nearest exit. Do not use the elevators."
2	Fire (Do not use elevators)	Female	Three (3) rounds of code 3 horn (followed by): "May I have your attention please! A fire emergency has been reported in the building. While this is being verified, please leave the building by the nearest exit. Do not use the elevators."
3	Fire	Male	Three (3) rounds of code 3 horn (followed by): "May I have your attention please! A fire emergency has been reported in the building. While this is being verified, please leave the building by the nearest exit."
4	Emergency	Female	Three (3) rounds of code 3 horn (followed by): "May I have your attention please! An emergency has been reported in the building. While this is being verified, please leave the building by the nearest exit."
5	Emergency	Male	Three (3) rounds of code 3 horn (followed by): "May I have your attention please! An emergency has been reported in the building. While this is being verified, please leave the building and report to the designated assembly area for your group."
6	Weather	Male	Five (5) seconds of 1kHz tone (followed by): "May I have your attention please! The National Weather Service has issued a severe weather warning for our area."
7	All Clear	Male	Five (5) seconds of 1kHz tone (followed by): "May I have your attention please! The building emergency has ended. An all clear has been given. Please resume normal activities."
8	Test	Male	Five (5) seconds of 1kHz tone (followed by). "May I have your attention please! This is a test of the Wheelock evacuation system, repeat, this is only a test."

- Each message can be selected to have a code 3 pre-alert tone, a 1kHz continuous pre-alert tone, or no pre-alert tone
- Post-tones are also selectable and match the pre-tones for individual messages
- Any of the 8 messages are field programmable to record your own custom message
  - Each message length is 30 seconds
  - A 1/8" line level audio input jack is supplied for message recording
  - A two-step recording procedure is required to ensure and verify that the standard message will be permanently erased
- Factory programmed messages are available for custom messages
  - Contact customer service for additional information
  - Form is required and can be downloaded from www.coopernotification.com

Note: For telephone paging, the SP40S can connect directly into the page port of the local phone system. If a page port is inaccessible, the SP-COA (C.O. Port Adapter for the SP40S) may be used to connect the SP40S to an unused C.O. port or stand-alone telephone.

Wheelock products must be used within their published specifications and must be PROPERLY specified, applied, installed, operated, maintained and operationally tested in accordance with their installation instructions at the time of installation and at least twice a year or more often and in accordance with local, state and federal codes, regulations and laws. Specification, application, installation, operation, maintenance and testing must be performed by qualified personnel for proper operation in accordance with all of the latest National Fire Protection Association (NFPA), Underwriters' Laboratories (UL), National Electrical Code (NEC), Occupational Safety and Health Administration (OSHA), local, state, county, province, district, federal and other applicable building and fire standards, guidelines, regulations, laws and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ).

SAFEPATH 2-Zone Class A or 4-Zone Class B Speaker Audio Splitter

Description

- Supervised 2-zone Class A or 4-zone Class B speaker audio splitter for the SP40S, SP40/2 or audio boosters
- Enables a single supervised speaker audio output to drive up to two Class A supervised speaker audio outputs or four Class B supervised speaker audio outputs
- For operation with SAFEPATH family of products: SP40S, SP40/2, SPB-320, SPB-160, SPB-80/4

Features

- Expands one zone to up to 2 zones of supervised speaker audio output in Class A
- Expands one zone to up to 4 zones of supervised speaker audio output in Class B
- Each Class A zone can accept up to 40 watts of audio
- Each Class B zone can accept up to 40 watts of audio
- Operates on either 25V or 70.7V RMS
- Mounts inside the enclosure of the SP40S, SP40/2 or audio boosters
- Power and Trouble LED's
- Individual zone short and open LED indication
- Capable of detecting wiring faults
- Removable wiring terminals for quick connect/disconnect accepting 12–22 AWG
- All output circuitry is Power Limited
- Space provided to allow for naming of the zones
- Powered by 24VDC, supplied by the either the SP40S, SP40/2 or audio boosters
- Standby and Alarm current at 24VDC is 15mA

Approvals & compliances

- UL Standard 864, 9th edition, and California State Fire Marshal (CSFM), New York City (MEA)
- UFC 04-021-01 2002

Applications

- Provides for expansion of one zone to up to 2 zones of supervised speaker audio output in Class A
- Provides for expansion of one zone to up to 4 zones of supervised speaker audio output in Class B

Table 6. Ordering Information

Model Number	Order Code	Description
SP4Z-A/B	9900	Supervised 2-Zone Class A or 4-Zone Class B Speaker Audio Splitter for the SP40S, SP40/2 or Audio Boosters
SPMB4Z	9907	Mounting Bracket for the SP4Z-A/B is required when used with the Audio Boosters

Note: The Speaker Splitter Mounting Bracket (SPMB4Z) is required when the speaker splitter is used in audio boosters. The SPMB4Z can support two splitters.

SAFEPATH Audio Boosters

Description

Supervised facility communication and emergency voice evacuation audio and audio/strobe power boosters, UL Standard 1711 and UL Standard 864, 9th edition with 24VDC battery backup capabilities. Designed to provide for additional supervised audio power for live voice, pre-recorded messages or background music (BGM). Fully supervised patent pending circuitry is always in effect even during BGM. The SPB-80/4 also provides 4 amps of 24 VDC supervised and synchronized strobe power.

The SPB-320, SPB-160 and the SPB-80/4 easily connects to the Wheelock SP40S or SP40/2. Multiple SPB-320, SPB-160 and SPB-80/4 Audio Boosters can be interconnected to accommodate large installations with supervised audio power and also supervised and synchronized strobe power requirements.

The SPB-320 draws 2.4 watts of audio input power to properly operate and provide additional supervised audio output power. The SPB-160 and the SPB-80/4 draws 1.2 watts of audio input power to properly operate and provide additional supervised audio output power. A maximum of 5,280 watts of supervised audio power can be achieved. Additional strobe power can be obtained via a combination of SPB-80/4 or Wheelock power supplies/chargers.

SPB-320 SPB-80/4 SPB-160

SPB-320: 320 watt supervised audio power

SPB-160: 160 watt supervised audio power booster (two 80-watt circuits)

SPB-80/4: 80 watt supervised audio power booster with 4 amps of supervised and synchronizable strobe power (two 2 amp circuits)

Features

System Activation: Audio

- 70V or 25V input from the SP40S or SP40/2
- 1 Volt input from SP4-RMX

System Activation: Strobe (SPB-80/4)

- 8–33VDC NAC input connected to the strobe input

Power supply & batteries

- Fully supervised patent pending circuitry always in effect even during BGM
- Power limited circuitry
- Class D amplifiers
- Internal battery charger and power supply
- Required batteries fit inside the enclosure (sold separately)
- SPB-320 requires four 12 VDC, 12 AH batteries
- SPB-160 and SPB-80/4 require two 12 VDC, 12 AH batteries

Inputs:

- Audio speaker inputs: 70V or 25V, field selectable
- Auxiliary in (for alarm input signal)

Outputs:

- SPB-320 has four 80 watt speaker output circuits
- SPB-160 has two 80 watt speaker output circuits
- SPB-80/4 has one 80 watt speaker output circuit and two 2 amp strobe circuits (4 amps total)
- Supervised Audio Speaker outputs: 70V or 25V field selectable (all boosters must be either 70 V or 25 V)
- Expansion output (supervised, 24VDC at 0.5A in alarm condition) used for connecting multiple boosters
- DC output (unsupervised for optional splitter power). Each speaker circuit (four for the SPB-320, two for the SPB-160, one for the SPB-80/4) can connect to speaker splitters.

SPB-80/4 Strobe Features:

- Two 24VDC 2 amps, NAC supervised, synchronizable, power limited, Class B strobe outputs
- Selectable outputs; Wheelock sync, pass through, or constant DC
- Trouble LED for open and short output conditions
- Alarm indicator: LED for strobe and expansion outputs

Approvals & compliances

- UL Standard 864, 9th edition, UL Standard 1711, California State Fire Marshal (CSFM), New York City (MEA)
- OSHA 1910.165, ADA and UFC 04-021-01 2
- 1-year warranty

Applications

- Provides for additional supervised audio power for large installations
- Provides for additional supervised and synchronizable strobe power for large installations
- Can be used in new construction as well as in retrofit construction

Technical specifications:

- 120VAC, 3.8A, 60 Hz input
- SP40SE Models 240 VAC, 2.5A, 50–60 Hz
- Standby current draw: 120mA, per amplifier board
- Alarm current draw: 9 amps, per amplifier board
- SPB-80/4 and SPB-160 have one amplifier board
- SPB-320 has two amplifier boards
- System Frequency Response:
  - Voice: 400 Hz–6.5 kHz
  - BGM: 275 Hz–15 kHz
- Removable quick connect/disconnect terminals, accepts 12–22 AWG
- Multiple LED's for easy indication of system diagnostic conditions
- Signal-to-Noise Ratio: > 70 dB
- Dynamic Range: > 65 dB
- Total Harmonic Distortion: 2%

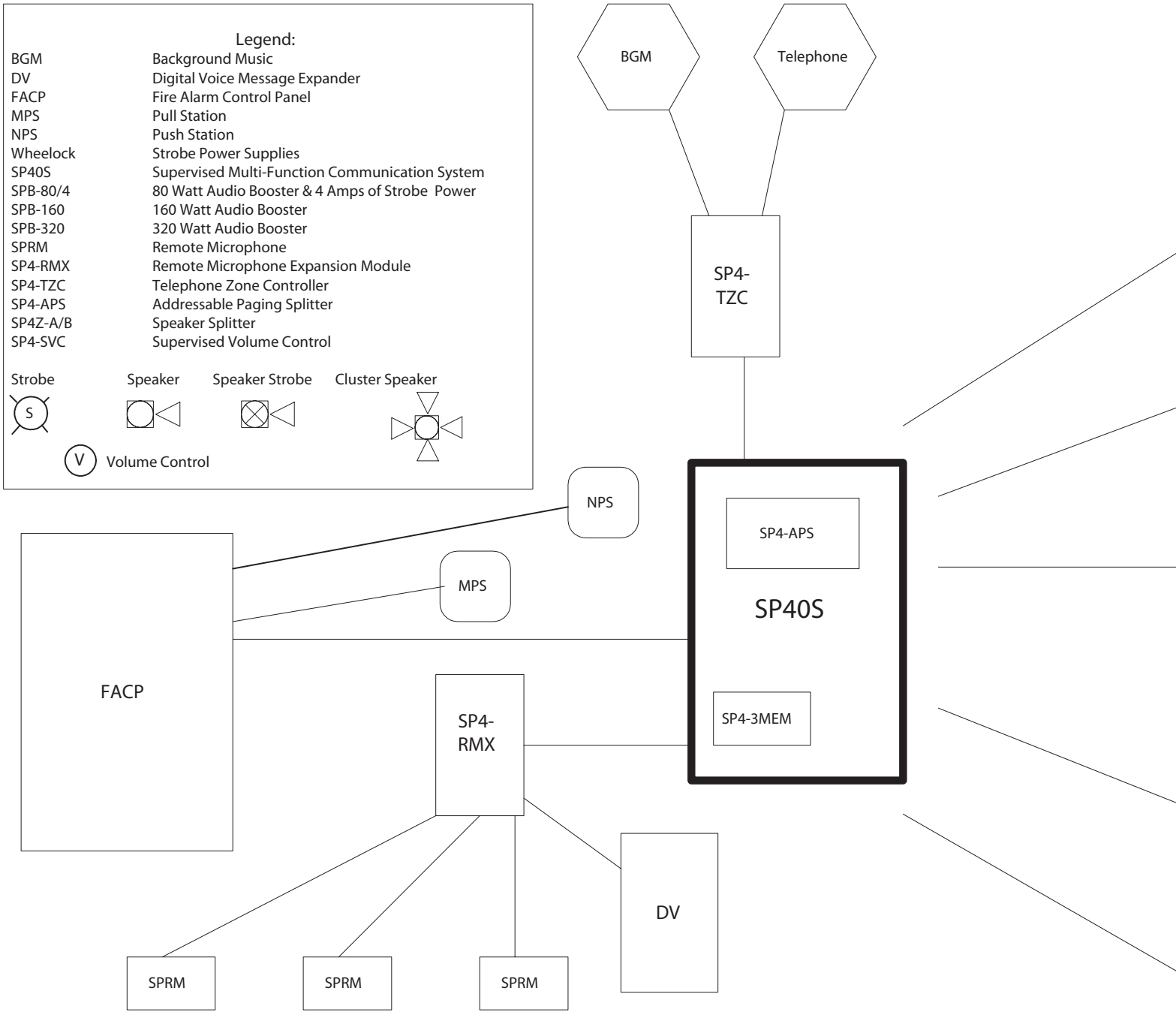
Table 7. Mechanical

SPB-160, SPB-80/4	
Dimensions	21" H x 16" W x 6" D (wall mount)
Weight	36 lbs. (without batteries)
Finish	Red exterior enclosure
Door Lock	Wheelock key-lock
SPB-320	
Dimensions	36" H x 24" W x 6" D (wall mount)
Weight	80 lbs. (without batteries)
Finish	Red or black exterior enclosure
Door Lock	Wheelock key-lock

Table 8. Ordering Information

Model Number	Order Code	Description
SPB-320	9918	320 watt supervised audio power booster (Four 80-watt circuits)
SPB-320E	6336	320 watt supervised audio power booster (four 80 watt circuits), 220 VAC input
SPB-320E-B	6353	320 watt supervised audio power booster (four 80 watt circuits), 220 VAC input, black enclosure
SPB-160	8989	160 watt supervised audio power booster (two 80 watt circuits), red enclosure
SPB-160-B	9930	160 watt supervised audio power booster (two 80 watt circuits), black enclosure
SPB-160E	6149	160 watt supervised audio power booster (two 80 watt circuits), 220 VAC input
SPB-160E-B	6150	160 watt supervised audio power booster (two 80 watt circuits), 220 VAC input, black enclosure
SPB-80/4	8988	80 watt supervised audio power booster with 4 amps of supervised and synchronized strobe power (two 2 amp circuits), red enclosure
SPB-80/4-B	9931	80 watt supervised audio power booster with 4 amps of supervised and synchronized strobe power (two 2 amp circuits), black enclosure
SPB-80/4E	6147	80 watt supervised audio power booster with 4 amps of supervised and synchronized strobe power (two 2 amp circuits), 220 VAC input
SPB-80/4E-B	6148	80 watt supervised audio power booster with 4 amps of supervised and synchronized strobe power (two 2 amp circuits), 220 VAC input, black enclosure
SPMB4Z	9907	Speaker splitter mounting bracket for SPB-320, SPB-160 or SPB-80/4

Note: The Speaker Splitter Mounting Bracket (SPMB4Z) is required when the speaker splitter is used in audio boosters. The SPMB4Z can support two splitters.



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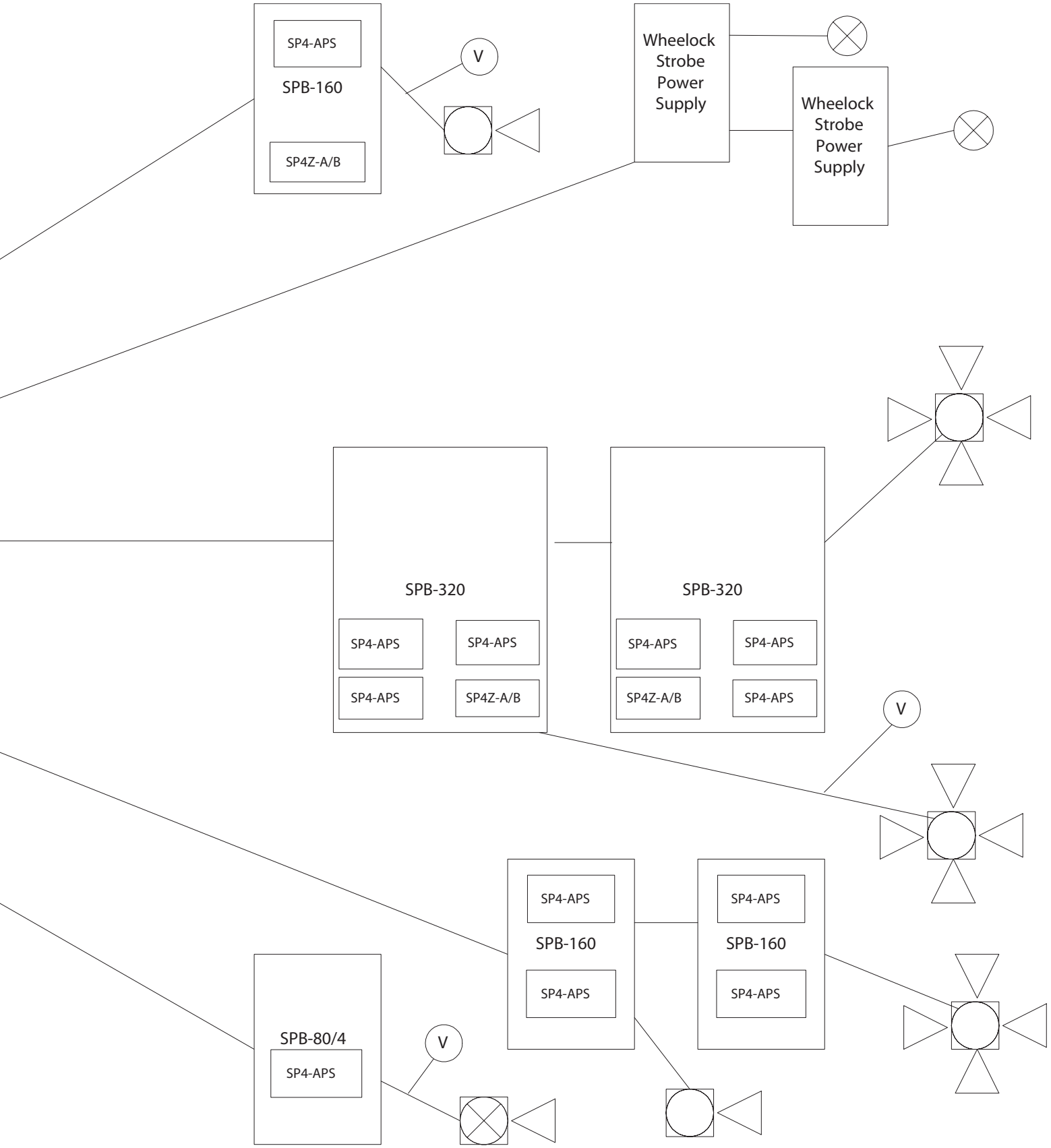
SP4-APS
SPB-160
SP4Z-A/B
V
Wheelock Strobe Power Supply
Wheelock Strobe Power Supply
SPB-320
SP4-APS
SP4-APS
SP4-APS
SP4Z-A/B
SPB-320
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SPB-160
SP4-APS
SP4-APS
SPB-160
SP4-APS
SPB-80/4
SP4-APS
V

SAFEPATH Addressable Paging Splitter and Telephone Zone Controller

SP4-APS

SP4-TZC

SP4-APS: Addressable paging splitter

SP4-TZC: Telephone zone controller

Features

- Allows selections of speaker zones via a telephone keypad (DTMF tones)
- One SP4-TZC (controller) can control up to 17 SP4-APS (splitters)
- Telephone page input connects to stand alone telephone, unused CO port, page port
- USB connection for logical zone grouping and
- BGM programming (supports Windows 2000 and Windows XP)
- Up to 9 logical zones, (a logical zone is a user selected group of up to 5 zones, individual or fixed)
- RS-485 digital control to the SP4-APS speaker splitters
- Connects to the SP40S or SP40/2 via the BGM input
- The combination of 1 SP4-TZC (controller) and up to 17 SP4-APS (splitters) can provide:
  - Class B
    - 4 zones per splitter
    - Up to 68 individual zones (17 splitters)
    - 17 fixed zones (groups of 4)
    - 9 logical zones
  - Class A
    - 2 zones per splitter
    - Up to 34 individual zones (17 splitters)
    - 17 fixed zones (groups of 2)
    - 9 logical zones

SP4-TZC telephone zone controller:

- Connects to the SP40S or SP40/2
- Auto programmable
- Custom user programmable (for logical zones)
- All call or selected zone(s) telephone paging
- Background music (BGM) zone(s) selectable
- Telephone input and background music (BGM) input
- Enclosure for the SP4-TZC (controller):
  - Dimensions: 13”H x 7.6”W x 2.15”D
  - Color: Black
  - Wall mountable
- Requires 24 VDC, model RPS-2406

SP4-APS addressable paging splitter:

- Addressable speaker zone splitter
- Mounts inside the SP40S, SP40/2, SPB-80/4, SPB-160 or SPB-320
- Operates on 24 VDC, supplied by the SP40S, SP40/2, SPB-80/4, SPB-160, SPB-320
- Handles 40 watts of supervised audio per zone
- UL Standard 864, 9th edition listed

Approvals & compliances

- UFC 04-021-01

Applications

- Connects to the SP40S or SP40/2 to control selectable paging and background music (BGM)
- Ability to access individual or multiple speaker zones throughout the SP40S or SP40/2 system via the telephone

Table 9. Ordering Information

Model Number	Order Code	Description
SP4Z-APS	9920	Addressable paging splitter
SP4-TZC	9921	Telephone zone controller
TZC-USB	9923	SP4-TZC programming cable

SAFEPATH Supervised Volume Control

SP-SVC: Supervised volume control

Features

- Supervised volume control for use with UL Listed Life Safety Applications
- Can handle up to 35 watts of 70.7 volt audio power input
- Adjustment settings: 0–10, in 3dB increments
- Operates in Class B or Class A wiring (for Class A, the SP4-APS is required)
- Requires a double gang, 3-1/2" deep back box or 4" square and 1-1/2" deep box with a 1-1/2" extension ring
- Stainless steel mounting plate with a black knob
- Maximum RMS current 10.0mA

Approvals & compliances

- UL Standard 864 and California State Fire Marshal (CSFM) listed for use with the SP40S, SP40/2 or SPB Audio Boosters
- OSHA 1910.165 and ADA compliant
- UFC 04-021-01

Applications

- Allows manual volume setting for telephone paging and background music for a specific speaker or speaker zone
- The selected adjustment will not affect the volume setting of emergency prerecorded messages or live microphone usage

Table 10. Ordering Information

Model Number	Order Code	Description
SP-SVC	9926	Supervised volume control for use with the SAFEPATH 4 system

SAFEPATH Remote Microphone

Description

Remote Microphone for use with the SAFEPATH 4 facility communications system—SP40S, SP40/2 or SP4-RMX

Features

- Supervised hand held push to talk microphone
- Key required to enable remote microphone use
- Individual front panel LED indication for; System Normal, System Trouble and Alarm
- When used with the SP40S or SP40/2, the priority level is 2, the SP40S or SP40/2 on board microphone is always priority 1
- Remote microphone usage disengages background music and general paging
- Voice frequency response: 275 Hz - 6.5 kHz
- Requires 24VDC, supplied by the SP40S, Audio Boosters, or SP4-RMX
- Input current:
  - Standby: 23mA
  - Alarm: 30mA
- Audio output level: 1.05V RMS
- 6 wire connection to the SP40S, SP40/2 or SP4-RMX
- Mounting plate is red and measures, 8 3/4" x 5 ¼" fits into a 4 gang back box
- All output circuitry is Power Limited

Approvals & compliances

- UL Standard 864, 9th edition and California State Fire Marshal (CSFM)
- UFC 04-021-01

Applications

- Provides for an additional microphone in a remote location
- Can be mounted up to 2,000 feet away from the SP40S or SP40/2

Table 11. Ordering Information

Model Number	Order Code	Description
SPRM	8996	Remote microphone for use with the SP40S, SP40/2, SPB-320, SPB-160, SPB-80/4 or SP4-RMX, red plate
SPRM-GP	9927	General paging microphone for use with the SPB-320, SPB-160, or SPB-80/4, black plate

SAFEPATH 4 Remote Microphone Expansion Module

SP4-RMX: Remote microphone expansion module

Features

- The SP4-RMX will provide the capability of connecting up to (3) three Remote Microphone Stations (SPRM)
- When connected to the SP40S or SP40/2, two SP4-RMX units can be cascaded together to provide up to six remote microphones
- Provides for an auxiliary input for connection of an external message repeater, for additional messages
- Can accept a line level input for broadcasting of other information
- When the SP4-RMX is connected to the SP40S or SP40/2, the entire system benefits from the additional microphone capability
- Can be connected to Audio Boosters for general (non-alarm) paging with use of SPRM-GP
- Multiple on board diagnostics with 3 status conditions: standby, alarm, and trouble
- Operates on 24 VDC, supplied by the SP40S, SP40/2, SPB-80/4, SPB-160, SPB-320
- The SP4-RMX is an external module
- Enclosure dimensions: 13”H x 7.6”W x 2.15”D
- Color: black
- Wall mountable

Approvals & compliances

- UL Standard 864 listed
- OSHA 1910.165, ADA and UFC 04-021-01

Applications

- Expands one remote microphone (SPRM) from the SP40S or SP40/2 to three remote microphones
- Two SP4-RMX modules can be cascaded together to provide up to six remote microphones from the SP40S or SP40/2
- Provides for an auxiliary input for connection of an external VoiceLink message repeater for additional messages

Table 12. Ordering Information

Model Number	Order Code	Description
SP4-RMX	9919	Remote microphone expansion module

Table 13. Microphone and message priority levels when the SP4-RMX is used with the SP40S or SP40/2

Priority Level	Device
	Microphones
1	SP40 on board microphone
2	SP4-RMX, remote microphones #1, 2, 3 (set priority or First In First Out
3	SP4-RMX, auxiliary input only
	SP40S Standard Messages
4	SP40S message 1
5	SP40S message 2
6	SP40S message 3
7	SP40S message 4
8	SP40S message 5
9	SP40S message 6
10	SP40S message 7
11	SP40S message 8

Table 14. Ordering Information

Model Number	Order Code	Description
SP40S	9929	Multifunction supervised paging, messaging, background music and emergency voice evacuation system with 24 VDC battery backup circuitry; single channel system with 40 watts of supervised audio power and 2 amps of supervised 24 VDC synchronized strobe power and 8 standard messages (batteries not included, 2 required.); red enclosure
SP40S-B	9935	Same as above but with black enclosure
SP40S-PMK	9936	SP40S 8-message programmed message kit
AM-SP40S-SMK	9937	SP40S after market 8-message standard message kit
AM-SP40S-PMK	9938	SP40S after market 8-message programmed message kit
AM-SP40S-NBT	9939	SP40S after market narrow band signal tone kit
SP-COA	9908	C.O. port adapter for the SP40S or SP40/2; recommended 24 VDC power supply is Wheelock RPS-2406 (Order Code 3770)
SP4Z-A/B	9900	Supervised 2-zone Class A or 4-zone Class B speaker audio splitter for the SP40S, SP40/2 or audio boosters
SPMB4Z	9907	Mounting bracket for the SP4Z-A/B is required when used with the audio boosters
SPB-320	9918	320 watt supervised audio power booster (four 80 watt circuits)
SPB-160	8989	160 watt supervised audio power booster (two 80 watt circuits), red enclosure
SPB-160-B	9930	160 watt supervised audio power booster (two 80 watt circuits), black enclosure
SPB-80/4	8988	80 watt supervised audio power booster with 4 amps of supervised and synchronized strobe power (two 2 amp circuits), red enclosure
SPB-80/4-B	9931	80 watt supervised audio power booster with 4 amps of supervised and synchronized strobe power (two 2 amp circuits), black enclosure
SP4Z-A/B	9900	Supervised 2-zone Class A or 4-zone Class B speaker audio splitter for the SP40S, SP40/2, SPB-320, SPB-160 or SPB-80/4
SPMB4Z	9907	Speaker splitter mounting bracket for SPB-320, SPB-160 or SPB-80/4
SP4Z-APS	9920	Addressable paging splitter
SP4-TZC	9921	Telephone zone controller
TZC-USB	9923	SP4-TZC programming cable
SP-SVC	9926	Supervised volume control for use with the SAFEPATH 4 System
SPRM	8996	Remote microphone for use with the SP40S, SP40/2, SPB-320, SPB-160, SPB-80/4 or SP4-RMX, red plate
SPRM-GP	9927	General paging microphone for use with the SPB-320, SPB-160 or SPB-80/4, black plate
BATC-R	5414	Battery cabinet, red
BATC-B	5413	Battery cabinet, black
BAT-1212	7390	12 volt, 12 ampere battery cell
BAT-1224	7391	12 volt, 24 ampere battery cell
BAT-1265	7392	12 volt, 65 ampere battery cell

Architects and engineers specifications

SP40S Facility Communications System

The system shall be a multi-purpose NFPA compliant, supervised, general-purpose audio, and fire/emergency evacuation system. The system shall be a single channel voice evacuation system incorporating supervision during the broadcasting of background music and general paging. The system shall be capable of delivering 40 watts of supervised audio power and 2 amps of supervised 24 VDC synchronized strobe power. Minimum supervised audio power shall be 40 watts, expandable to 5280 watts, depending on system configuration and with additional modules and power boosters. Supervised 24 VDC synchronized strobe power shall be 2 amps, expandable to the requirements of the installation. The system shall be capable of operating from a 120 VAC power source. E models shall be capable of operating from a 240 VAC power source. All models shall have a 24 VDC battery backup. Standard on-board system features shall include: digital voice messaging, a hand-held push-to-talk microphone with override priority, and a power supply/battery charger. The system shall be capable of interfacing with telephone systems for general paging announcements and will have night ringer capabilities. Form C contacts shall be provided for system alarm and trouble conditions.

The system shall have 8 message contacts with contact closure activation. Background music input voltage shall be capable of handling less then 2.5 V peak to peak or less then 0.3 volts. The system shall have thirteen priority ordered inputs, including: On Board Microphone, Auxiliary Input (Line Level), 8 Digital Messages, Night Ringer Input, Telephone Paging Input, and Background Music Input. The system shall have preset audio levels for emergency messaging (prerecorded and live mic). The system shall revert back to a preset level regardless of the volume set for background music (BGM) or general paging. Background music inputs can be an AM/FM tuner, cassette, CD, MP3, or any other remote source. The system shall be supplied with 8 pre-recorded messages and be capable of in-field recording of customer unique messages. The system shall have a dual-tone tone generator with Code-3 Tone and Slow Whoop. When the system is on battery power, telephone page, night ring and background music shall be disengaged.

The panel shall have power-limited circuitry with an internal battery charger and power supply. The power supply/charger section shall be able to charge 24 VDC batteries with a maximum capacity of 33 amp hours. Up to two 12 VDC, 12 AH batteries may be housed in the enclosure. Batteries larger than 12 Ah shall be housed in a separate enclosure such as the Cooper Wheelock BATC or equivalent.Batteries shall be supplied separately.

The system shall have power limited circuitry and class B wiring. Wiring terminal blocks will be removable and accept #22–#12 AWG wire. Audio output voltage shall be selectable for 25V or 70.7V. The voice (live microphone or recorded message) frequency response shall be 275 Hz–6.5 kHz, background music frequency response shall be 100 Hz–15 kHz. Stand by current draw shall be 140mA. Alarm current draw shall be 4.7 amps. The signal to noise ratio shall be better than 65 dB, dynamic range shall be better than 65 dB, total harmonic distortion shall be less than 2%.

The system shall be wall mountable, enclosed in a steel locking enclosure. The required batteries for 40 watt systems shall fit inside the enclosure. The 40 watt system shall weigh no more than 36 lbs (without batteries) and its dimensions shall not exceed 21" H x 16" W x 6" D. Approvals for the system shall include: UL Standard 864, 9th edition, UL Standard 1711, FCC part 15, California State Fire Marshal (CSFM) and New York City (MEA). The system shall be OSHA 1910.165 and ADA compliant. 1 Year Warranty.

SAFEPATH 4 Audio Boosters

The Wheelock SPB-320, SPB-160 and SPB-80/4 Audio Boosters shall be NFPA compliant supervised audio and supervised 24VDC synchronized strobe power boosters (some models will have supervised 24VDC synchronized strobe booster capability). The booster shall have 24VDC battery backup capabilities. The booster shall have the capability to supervise the circuitry during playback of background music. The booster shall have the capability to be inter-connected to accommodate large installations with supervised audio power and also supervised and synchronized strobe power requirements. Three versions of the booster shall be made available: SPB-80/4, (80 watts of supervised audio power and 4 amps of supervised and synchronized strobe power), SPB-160 (160 watts of supervised audio) or SPB-320 (320 watts of supervised audio).

Each booster shall use 1.2 watts of audio input power (The SPB-320 requires 2.4 watts of audio power) to properly operate and provide additional supervised audio output power. A combination of boosters can be added together to provide for a maximum of 5,280 watts of supervised audio power. Additional strobe power can be obtained via a combination of boosters. The audio section of the booster shall be connected via a selectable 70V or 25V input from the Wheelock SP40S. The strobe section of the booster shall be divided into two sections each supplying 2 amps of 24VDC, NAC, supervised, synchronizable, power limited, Class B strobe outputs, with selectable outputs offering Wheelock sync, pass through, or constant DC and can be activated via 8-33VDC NAC input or contact closure.

The internal battery charger/power supply shall be capable of charging 24 VDC batteries with a maximum capacity of 33 amp hours. The enclosure shall be capable of housing the correct number of 12 VDC rechargeable batteries [SPB-80/4 (2), SPB-160 (2), SPB-320 (4)] with a maximum capacity of 12 amp hours. Batteries with a larger capacity require an external battery enclosure(s) such as the Cooper Wheelock BATC or equivalent.

The boosters shall have power-limited circuitry and be a class D amplifier with an internal battery charger and power supply. The required batteries (purchased separately) shall fit inside the enclosure (two 12VDC, 12 AH for the SPB-80/4 or SPB-160 and four 12 VDC, 12 AH for the SPB-320). The booster shall operate on 120VAC, 3.8A, 50–60 Hz input. E model boosters shall operate on 240 VAC, 2.5A, 50–60 Hz input. The SPB-80/4 or SPB-160 standby current draw shall be 120mA and alarm current draw shall be 9 amps. The SPB-320 consists of two SPB-160's. Each SPB-160 shall have its own power supply and battery charger. The voice frequency response shall be 400 Hz–6.5 kHz +/- 3 dB, the BGM frequency response shall be 275 Hz–15 kHz +/- 3 dB. Removable quick connect/disconnect terminals that accept 12–22 AWG shall be used. Multiple LED's for easy indication of system diagnostic conditions shall be present on the PC board. The Signal-to-Noise Ratio shall be > 70 dB, the dynamic range shall be > 65 dB, the Total Harmonic Distortion spec shall be 2%.

The booster shall be wall mountable, enclosed in a steel locking enclosure, with a red finish. Approvals for the booster shall include; UL Standard 864, 9th edition, UL Standard 1711, CSFM and MEA. The system shall be OSHA 1910.165, ADA and UFC compliant. The booster shall carry a 1 Year Warranty.

The SPB-80/4 & SPB-160 enclosure dimensions are 21" H x 16" W x 6" D and the SPB-320 enclosure dimensions are 36" H x 24" W x 6" D.

4 Zone Class B Speaker Splitter

The Wheelock SP4Z-A/B shall be UL Standard 864, 9th edition, California State Fire Marshal (CSFM) and New York City (MEA) approved, 2-Zone Class A or 4-Zone Class B Speaker Splitter for operation with the Wheelock, SP40S, SP40/2, SPB-80/4, SPB-160 and SPB-320. The SP4Z-A/B shall enable a single supervised speaker audio output to drive up to two Class A supervised speaker audio outputs or four Class B supervised speaker audio outputs. Each Class A zone shall be capable of accepting up to 40 watts and operate on either 25 or 70.7V RMS of audio input. Each Class B zone shall be capable of accepting up to 40 watts of audio and operate on either 25 or 70.7V RMS of audio input. The SP4Z-A/B shall be capable of supporting live microphone paging, prerecorded emergency voice evacuation messages, supervised background music and general paging announcements.

The SP4Z-A/B shall mount inside the enclosure of the SP40S, SP40/2, SPB-80/4, SPB-160 and SPB-320 and shall have power and trouble LED's with individual zone short and open LED indication. The SP4Z-A/B shall be capable of detecting wiring faults. The SP4Z-A/B shall be powered by 24VDC, which is to be supplied by the SP40S, SP40/2, SPB-80/4, SPB-160 or SPB-320. Standby and Alarm current at 24VDC shall be 15mA. Removable wiring terminals for quick connect/disconnect accepting 12–22 AWG shall be incorporated. All output circuitry shall be power limited. Space shall be provided to allow for naming of the zones.

Addressable Paging Splitter and Telephone Zone Controller

The Wheelock Addressable Paging Splitter (SP4-APS) and Telephone Zone Controller (SP4-TZC) shall be used to control and direct telephone paging and background music zones connected to the SAFEPATH Multi-Function Facility Communication System using an RS485 connection.

The Addressable Paging Splitter (SP4-APS) shall be UL Standard 864, 9th edition and California State Fire Marshal (CSFM) approved, addressable and supervised 2-zone Class A or 4-zone Class B Speaker splitter. The SP4-APS shall be used with Wheelock's SP40S or SP40/2 panel and the Audio Booster (SPB-160, SPB-80/4, and SPB-320) panels. Each SP4-APS shall have a single audio input capable of 25 Vrms or 70.7 Vrms at a maximum of 80 Watts. The input audio power shall be distributed to the zone connections with the total not exceeding the input and no zone exceeding 40 Watts. When audio boosters are connected, each audio booster module shall consume 1.2 Watts from the total input power of the SP4-APS. The splitter shall be mounted inside the SP40S, SP40/2 or Audio Booster that it is associated with, and it shall operate on 24VDC supplied by the supported module. The SP4-APS shall contain 16 LED indicators used to monitor and troubleshoot the module.

The Telephone Zone Controller Module (SP4-TZC) shall be used to address the output zones on the SP4-APS. The SP4-TZC shall be capable of supporting 17 SP4-APS speaker splitter modules and shall be capable of addressing all zones at once ("All Call"), a maximum of 68 separate zones, 17 fixed zone groups and 9 programmed logical zone groups. This shall be accomplished using two digit DTMF tones from a page port, an unused CO port, or a stand alone telephone with a loop start circuit. Also, the SP4-TZC shall be able to select zones for background music. The SP4-TZC has the following inputs: Power, USB port, Background Music (BGM), Page Audio in. The outputs are: Audio out and RS485 Digital Control. The basic operating parameters of the SP4-APS shall be pre-programmed. Customized programming shall be accomplished using a USB cable and programming computer software. The SP4-TZC shall be powered using a 24VDC filtered and regulated power supply such as the Wheelock RPS-2406. The Controller Module assembly is mounted in a metal enclosure measuring 13"L x 7 5/8"W x 2"D.

Supervised Volume Control

The Wheelock SP-SVC shall be UL Standard 864, 9th edition approved, supervised volume control for use with the SAPEPATH Facility Communications System.

The SP-SVC shall provide for manual volume setting for telephone paging and background music for a specific speaker or speaker zone. The selected adjustment will not affect the volume setting of emergency prerecorded messages or live microphone usage. The SP-SVC shall be capable of handling up to 35 watts of audio power @ 70.7 volts or 4 watts audio power @ 25 volts and shall operate on either 70.7 or 25 volt input from an SP40S or Audio Booster. The SP-SVC shall be capable of operating in Class B or Class A wiring configurations (for Class A, the SP4-APS is required). The SP-SVC shall receive operating power from an Audio Booster, SP40S or SP40/2. Volume adjustment settings shall be off, 1–10, in 3dB increments. The SP-SVC shall be supplied with a stainless steel mounting plate with a black knob and require a double gang, 3-1/2" deep back box for mounting.

Remote Microphone

The Wheelock SPRM shall be UL Standard 864, 9th edition and California State Fire Marshal (CSFM) approved, Remote Microphone for use with the SAFEPATH Facility Communications System.

The SPRM shall be a supervised hand held push to talk microphone and a key shall be required to enable remote microphone use. (Same key as SP40S or SP40/2). Removable wiring terminals for quick connect/disconnect accepting 12–22 AWG shall be incorporated. All output circuitry shall be power limited. Individual front panel LED's shall be provided for indication of System Normal, System Trouble and Alarm. Multiple on board diagnostic LED's shall be provided. When used with the SP40S or SP40/2, the priority level shall be number two. Remote microphone usage shall disengage background music and general paging.

Voice frequency response shall be 275 Hz–6.5 kHz +/- 2.4 dB. Power requirements shall be 24VDC and will be supplied by the SP40S or SP40/2. Input current for Standby shall be 26mA and for Alarm 38mA. Audio output level shall be 1.05V RMA. There shall be a 6-wire connection to the SP40S or SP40/2. The mounting plate shall be red and measure, 8-3/4" x 5-1/4", and shall fit into a 4 gang back box.

Remote Microphone Expansion Module

The Wheelock SP4-RMX Remote Microphone Expansion Module shall be UL Standard 864, 9th edition and California State Fire Marshal (CSFM) approved for use with the SAFEPATH SP40S Facility Communications System.

The SP4-RMX shall be a supervised outboard expansion module for use with the SAFEPATH system. It shall be used to expand the number of optional supervised Remote Microphone (SPRM) modules up to three. Two SP4-RMX Remote Microphone Expansion Modules can be connected to the SP40S or SP40/2 and shall have the capability of providing the SP40S or SP40/2 with up to six system wide "All Call" Remote Microphone (SPRM) modules①. The SP4-RMX can be programmed to provide either priority override for each SPRM module input or First In First Out. First In First Out allows the active SPRM to complete its communication before another SPRM can be used. All output circuitry shall be power limited. Multiple on board diagnostic LED indicators shall be provided. All wiring shall be connected to the module using quick connect/disconnect wiring terminals, capable of accepting 12–22 AWG wiring.

The SP4-RMX PCB assembly is mounted in a metal enclosure measuring 13"L x 7 5/8"W x 2"D. The SP4-RMX can support each SPRM at a range up to 2000 feet.

① The SP4-RMX can also be connected to Audio Booster for general (non-alarm) paging with use of SPRM-GP.

Note: Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Eaton's Cooper Notification business standard terms and conditions.

Note: Refer to the products Installation Instructions for proper installation, wiring procedures and any additional specifications.

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